DNIC AND ADAPTATION IN FIBROMYALGIA.

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Aim of Investigation: Fibromyalgia may involve inadequate pain inhibition mechanisms. A study of diffuse noxious inhibitory controls (DNIC) and adaptation was undertaken with 25 fibromyalgia patients and 26 healthy controls in order to investigate this hypothesis.

Methods: 80 electrical pulse trains were administered in 4 blocks to the forearm. Intensities varied from nonperceptible to moderately painful, using a multiple staircase procedure, to determine detection and pain thresholds. Heat pulses (30/min), with intensities either 1.0degC above (Pain condition) or 0.3degC below (Heat condition) the individual heat pain threshold, were applied to the foot as DNIC-eliciting stimulation. Pain and Heat conditions took place in block 2 or 3 (randomized order). Blocks 1 and 4 served as the Control condition.

Results: There was no adaptation for electrical stimulation at the detection level, but strong adaptation at the pain threshold level. Fibromyalgia patients showed only slightly (N.S.) less adaptation. Heat pain thresholds were significantly lower in the patients than in the controls. The control subjects had significantly higher electrical pain thresholds, but not detection thresholds, under the Pain and Heat conditions than under the Control one (Pain and Heat did not differ). There were no comparable differences between the Pain, Heat and Control conditions in the patients.

Conclusions: Unlike healthy controls, fibromyalgia patients showed no DNIC-like effects. This was due either to a lack of DNIC or to the fact that the DNIC-eliciting stimuli (based on individual heat pain thresholds) were, although subjectively equal, physically weaker. Further studies, using the DNIC-paradigm, appear to be promising in understanding the basic mechanisms of pain perception in fibromyalgia and other disorders.